In the Claims

1. (previously presented) Device for non-contact transmission of electrical signals or energy between at least two parts mobile relative to each other, comprising a plurality of defined electromagnetic coupler elements provided on the at least two parts between which signals or energy is to be communicated, with a near field of the coupler elements causing the non-contact transmission; wherein

each coupler element provided on at least one part comprises at least one resonator including a single element which is able to resonate per se and independently of the other coupler elements, and which has a resonance frequency approximately equal to the frequency of the signals or energy to be transmitted, and

the individual resonators are connected to each other via a line which is terminated in a manner free from reflection.

2. (previously presented) Device according to Claim 1, wherein said at least one resonator is a resonating cavity, a line resonators, a dielectric, a ferromagnetic or a piezoelectric resonator.

3. (currently amended) Device for non-contact transmission of electrical signals or energy between at least two parts mobile relative to each other, comprising a plurality of defined electromagnetic coupler elements provided on the at least two parts between which signals or energy is to be communicated, with a near field of the coupler elements causing the non-contact transmission; wherein

said coupler elements on at least one part form a conductor structure configured as a cascade circuit which is terminated in a manner free from reflection; and each coupler element, independently of other coupler elements, is a ~~resonator~~ resonance system having a resonance frequency higher than a highest frequency of wide-band signals to be transmitted.

4. (previously presented) Device according to Claim 3, wherein a system formed by said coupler elements has a low-pass characteristic.

5. (previously presented) Device according to claim 3 wherein said conductor structure in its entirety is not capable of resonating.

6. (previously presented) Device according to claim 3, wherein each coupler element able to resonate comprises an element including at least one component producing an inductive and capacitive effect, and a following coupler element taps a voltage or a current from at least one reactive element of a preceding coupler element as an input signal.

7. (previously presented) Device according to Claim 6, wherein each coupler element is composed of at least one inductance and at least one capacitor.

8. (previously presented) Device according to Claim 7, wherein individual inductances of various coupler elements of one part are connected in series.

9. (previously presented) Device according to Claim 8, wherein a continuous conductor line forms the individual inductances of the coupler elements.

10. (previously presented) Device according to Claim 9, wherein the capacitors are configured as flat conducting elements which are connected to said continuous conductor line via branch lines or directly joined to the conductor line laterally.

11. (previously presented) Device according to Claim 10, wherein flat conducting elements are provided on either side of said continuous conductor line.

12. (previously presented) Device according to Claim 6, wherein said components producing an inductive and capacitive effect are configured as structures of a printed circuit board.

13. (previously presented) Device according to Claim 12, wherein said printed circuit board is a flexible board.

14. (previously presented) Device according to Claim 13, wherein said printed circuit board is provided with slots.

15. (previously presented) Device according to Claim 6, wherein said components producing an inductive and capacitive effect are discrete elements.

16. (previously presented) Device according to Claim 3, wherein a plurality of coupler elements tuned to different frequency ranges are disposed to be spatially close to each other to provide a coupler structure which is tuned to these frequency ranges.

17. (previously presented) Device according to Claim 16, wherein said coupler structure is symmetrical.

18. (previously presented) Device according to Claim 12, wherein conductor structures with a grounded surface, capacitors and/or inductors are provided on either side of a printed circuit board.

19. (withdrawn) Device according to Claim 1, characterized in that said coupler elements are configured as differential coupler elements and that a differential signal is applied to said coupler elements.

20. (previously presented) Device according to Claim 3, wherein coupler elements provided on all parts are able to resonate and are matched with each other.

21. (previously presented) Device according to Claim 3, wherein coupler elements on one part are able to resonate, and coupler elements on other parts are conventional coupler elements.

22. (previously presented) Device according to Claim 21, wherein the conventional coupler elements are selected from the group consisting of coils, ferrite cores, capacitors and antennas.

23. (previously presented) Device according to Claim 3, wherein line systems serving to supply or pass on transmitted signals or energy are shielded from said coupler elements.

24. (withdrawn) Device according to Claim ,1 characterized in that at least one activator unit is provided which activates the respective coupler element only when the coupler elements of a relatively moved part are approaching.

25. (previously presented) Device according to Claim 3, wherein said coupler elements are designed to have electrical characteristics which are adjusted to an operating point only by dielectric or magnetic characteristics of an approaching coupler element.

26. (previously presented) Device according to Claim 3, wherein the coupling of said coupler elements to a line system serving to supply transmitted signal or energy is performed by active or passive devices such as amplifiers or semiconductor switches.

27. (previously presented) Device according to Claim 3, wherein said coupler elements are shielded from the environment by a shield made of an electrically conductive material.

28. (previously presented) Device according to Claim 3, wherein signals or energy are supplied to said coupler elements by a switching or amplifying element.

29. (previously presented) Device according to Claim 28, wherein a signaling means is provided which generates a regenerative coupling signal for said switching or amplifying element from voltages and currents of the resonators, such that an oscillation will occur on at least one resonance frequency.

30. (withdrawn) Device according to Claim 29, characterized in that said signaling means is so configured that it couples out one magnitude proportional to one part of a series resonance current.

31. (withdrawn) Device according to Claim 29, characterized in that said signaling means is so designed that it couples out one magnitude proportional to one part of a parallel resonance voltage.

32. (withdrawn) Device according to Claim 29, characterized in that in the case of several resonances said signaling means is so designed that it couples out a combined signal consisting of a magnitude proportional to a series resonance current and proportional to a parallel resonance voltage.

33. (withdrawn) Device according to Claim 1, characterized in that an additional secondary oscillator is provided to facilitate the commencement of the oscillation of the circuit.

34. (withdrawn) Device according to of the Claim 1, characterized in that an analyser means is provided which determines the operating frequency of the system and derives therefrom a signal in correspondence with the size of the spacing of said units adapted to be moved relative to each other.

35. (previously presented) Device according to Claim 3, wherein said parts mobile relative to each other perform a rotational movement.

36. (previously presented) Device according to Claim 3, wherein said parts mobile relative to each other perform a translational movement.

37. (previously presented) An apparatus for non-contact transmission of electrical energy between a movable part and a stationary part comprising:

at least two coupler elements provided on one of the two parts;

each coupler element having a resonator;

a line coupling each of said resonators to each other, said line being terminated such that signal reflections are substantially eliminated;

wherein each resonator comprises a single element which resonates independent of the other resonators at a resonant frequency that is approximately equal to a frequency of the transmitted electrical energy.

38. (previously presented) The apparatus according to claim 37 further comprising a electrical energy source wherein at least one of the two parts comprises a conductor structure having a symmetrical configuration with a first and a second line coupled to the electrical energy source.

39. (previously presented) The apparatus according to claim 38 wherein the first and second lines supply electrical energy to at least a first coupler element and to at least a second coupler element, the electrical energy comprising differential signals.

40. (previously presented) The apparatus according to claim 37 further comprising:

a second coupler element positioned on the part opposed to the part said at least two coupler elements are positioned on;

an activator unit provided with said second coupler element, said activator unit activating one of the at least two coupler elements when the second coupler element moves into proximity with one of the at least two coupler elements.

41. (currently amended) An apparatus for non-contact transmission of electrical energy between a first movable part and a second stationary part comprising:

at least two electromagnetic coupler elements provided on one of the two parts;

each coupler element having a ~~resonator~~ resonance system;

said at least two electromagnetic coupler elements forming a conductor structure comprising a cascade circuit, which is terminated such that signal reflections are substantially eliminated;

wherein each ~~resonator~~ resonance system comprises a single element which resonates independent of the other ~~resonator~~ resonance system at a resonant frequency that is higher than a highest frequency of the transmitted electrical energy.

42. (previously presented) The apparatus according to claim 41 further comprising a electrical energy source wherein at least one of the two parts comprises a conductor structure having a symmetrical configuration with a first and a second line coupled to the electrical energy source.

43. (previously presented) The apparatus according to claim 42 wherein the first and second lines supply electrical energy to at least a first coupler element and to at least a second coupler element, the electrical energy comprising differential signals.

44. (previously presented) The apparatus according to claim 41 further comprising:

a second coupler element positioned on the part opposed to the part said at least two coupler elements are positioned on;

an activator unit provided with said second coupler element, said activator unit activating one of the at least two coupler elements when the second coupler element moves into proximity with one of the at least two coupler elements.